

North Inlet-Winyah Bay National Estuarine Research Reserve

K12 Environmental Education Market Analysis Report

July 2011

Background:

Located in Georgetown County, South Carolina, the North Inlet – Winyah Bay National Estuarine Research Reserve (NERR or Reserve) encompasses 18,916 acres of tidal marshes and estuarine waters along the state's northern coast. Most of the Reserve is located on Hobcaw Barony, the 17,500 acre property of the Belle W. Baruch Foundation, a private, 501 (c) (3) operating foundation that manages its land in perpetuity for conservation, research and education. The North Inlet – Winyah Bay NERR represents a state-federal partnership between the National Oceanic and Atmospheric Administration (NOAA) and the University of South Carolina (USC). It is administered by USC's Belle W. Baruch Institute for Marine and Coastal Sciences which also operates the Baruch Marine Field Laboratory on the Hobcaw Barony property. The North Inlet – Winyah Bay Reserve is part of NOAA's National Estuarine Research Reserve System (NERRS), a network of protected areas established to provide opportunities for long-term research and education in support of informed coastal management. The NERRS currently consists of 28 Reserves in 23 states and territories.

System-wide Education Priorities:

The goal of the NERRS education program is to create a system-wide K-12 Estuarine Education Program (KEEP) that will enable reserve educators to provide consistent, high-quality estuary education programs. Reserves that choose to participate in KEEP are required to follow a sequenced model established by all reserve educators prior to implementation. This model calls for individual NERR sites to conduct a Market Analysis (MA) and a Needs Assessment (NA). A MA is defined here as a systematic tool for assessing other local and regional organizations that offer the same or similar services and identifying potential audiences for these services. A market analysis helps to match services with audiences while decreasing the potential for duplication and redundancy with other programs.

In 2007, the NERRS Education MA/NA Sub-Committee developed a 'Market Analysis & Needs Assessment Guidance Document' and from 2008-2010, the Sub-Committee-in conjunction with NOAA Coastal Services Center (CSC)-developed a list of standardized questions and data requirements, which were vetted with the NERRS Education Coordinators and have been utilized as a starting point for each reserve's individual MA/NA. The draft questions were then pilot tested by the North Carolina and Weeks Bay Reserves in 2009. In addition, eleven NERR sites recently received NOAA 315 funds to conduct the MA/NA process at their individual reserves, and several more sites, including NIWB NERR, have undertaken the process without additional resources. Our goal locally is to continue the KEEP process and conduct a future needs assessment of the Georgetown County School District, building upon the information gathered during the MA.

By completing a coordinated MA/NA, each reserve will better understand the needs of their K-12 teachers and students, define how best to fill gaps in estuarine science education in their region, and develop a strategy for developing or strengthening partnerships with other educational institutions. The MA/NA process also offers documentation of the reserve education niche and provides for strategic direction and effective allocation of resources in the future.

North Inlet-Winyah Bay MA:

The MA targets current environmental education providers that serve school districts in Georgetown and Horry Counties, SC; these school districts are within the Reserve's target watershed which serves as a geographic focus area for the integrated research, stewardship, education and training activities outlined in the NI-WB NERR Management Plan. In networking with and researching current education providers in our area, results of a previous grant-funded market analysis (conducted in 2006 with funding from The Gaylord & Dorothy Donnelley Foundation) were offered from an established and well-respected regional environmental education provider, the SEWEE Association. The South Eastern Wildlife and Environment Education (SEWEE) Association serves as the Friends Group for the Cape Romain National Wildlife Refuge (NWR), Ernest F. Hollings ACE Basin NWR, Waccamaw NWR and Francis Marion National Forest of coastal South Carolina. The associated summary report 'Survey of Environmental Education Organizations in the Coastal Region of South Carolina' generated extensive regional information which was used as a reference resource for the Reserve's MA. The NIWB NERR is also a member of the Georgetown-Horry Regional Environmental Education Network (GREEN), a partnership of environmental educators working with Georgetown and Horry County school children and their teachers and parents. The GREEN membership meets biannually, with several members also on the Reserve's Education Advisory Committee, and these meetings were used to request input and collect information to enhance the market analysis process.

The MA survey was administered July 1, 2011, using the web-based SurveyMonkey® tool and the survey was open for three weeks (See Appendix I for the complete survey instrument). A cover letter explaining the MA and invitation to complete the survey were sent to a list of environmental education providers in the region, as well as several state-wide organizations. After two weeks, a reminder message was sent to those who had not yet responded. A total of 38 survey invitations were sent out with 21 responses after the two week deadline. Several key respondents did not complete the survey, and follow up phone calls were made to inquire about the correct contact information, assist with any questions, and encourage the organizations to complete the survey; this process yielded information from two other organizations. The deadline was extended an additional week to allow time for final responses (due to a request from an additional last minute respondent) and the survey was officially closed at the end of July with a final total of 24 organizations responding.

Please note the following questions and responses are not in the order they were administered, as some of the site-based questions flowed more logically in the survey and were interspersed among required data questions. For the purposes of this report, the survey questions and responses have been broken into two sections-Estuarine Reserves Division (ERD) 'Required Data' questions, and NIWB NERR site-specific questions. The percentages included in the Survey Monkey™ summary analysis here reflect the percentages and actual number of responses from these final 24 respondents.

Survey Questions and Results

ERD Data Requirement: List of the Organizations Surveyed (Survey Q#1). See Appendix II for a complete listing of each organization's contact information.

Survey Monkey Respondents:

ACE Basin NERR Education Program (w/SCDNR)
Belle W. Baruch Foundation/Hobcaw Barony Discovery Center
Brookgreen Gardens Education Department
The Children's Museum of South Carolina
Coastal Carolina University, Center for Marine & Wetland Studies
Earth Force - Lowcountry Affiliate
Georgetown County Environmental Education Center
Georgetown County Library System
Georgetown County Parks & Recreation
Huntington Beach State Park
Keep Georgetown Beautiful
Lowcountry Environmental Education Programs (LEEP)
Murrells Inlet 2020
Myrtle Beach State Park
Riverbanks Zoo and Garden
SEWEE Association (Friends Group, National Wildlife Refuges & Coastal Forests of SC)
South Carolina Aquarium
South Carolina Department of Health and Environmental Control (SCDHEC)
South Carolina Department of Natural Resources (SCDNR) Marine Education Program (w/ACE NERR)
South Carolina State Museum
South Carolina Sea Grant Consortium/Centers for Ocean Science Education Excellence Southeast (COSEE-SE)
Southeast Coastal Ocean Observing Regional Association (SECOORA)
University of South Carolina/Longleaf Environmental Learning Center
Waccamaw Riverkeeper Program of Winyah Rivers Foundation

Email and/or Phone Respondents (follow-up) that did not complete survey:

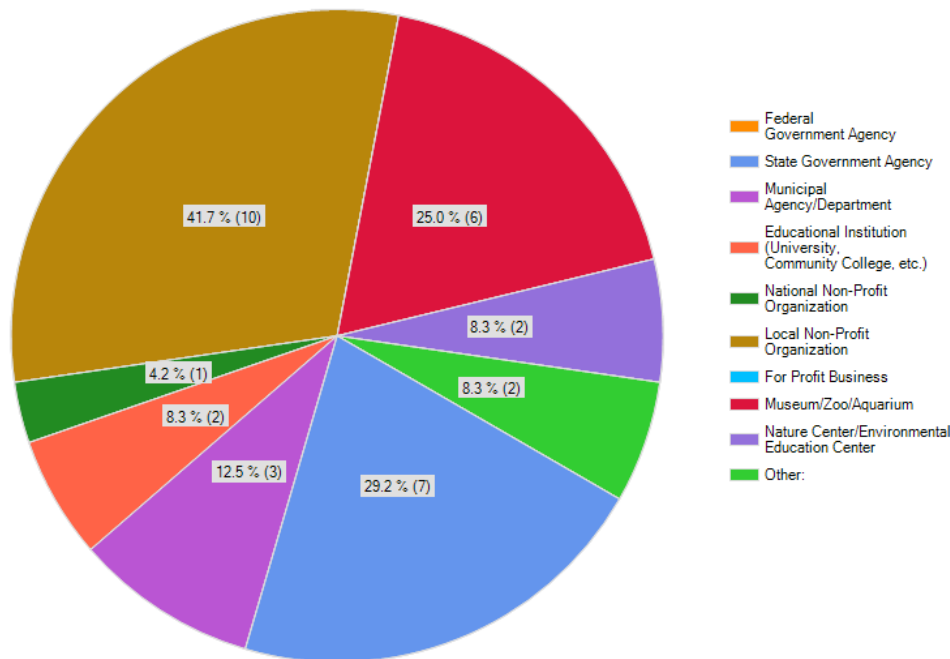
Alligator Adventures: email response-no longer offer K-12 programming
SCDHEC: partial survey and phone response-no K-12 programming; provide grant opportunities for SC schools

No Response (survey, email, or phone):

Barrier Island Environmental Education Center
Captain Dick's Marina Salt Marsh Explorer Cruises
Clemson University-Carolina Clear, Camp Sewee, Youth Learning Institute
Georgetown & Horry County YMCA afterschool programs
Horry County Museum
Playcard Environmental Education Center
Ripley's Aquarium
Service Over Self (SOS)

ERD Data requirement: Total number and percentage of organizations that are 1) Federal/state government, 2) Educational institutions, 3) Zoos/aquariums, and/or 4) Non-profits (Survey Q#2).

How would you classify your organization? Check all that apply.



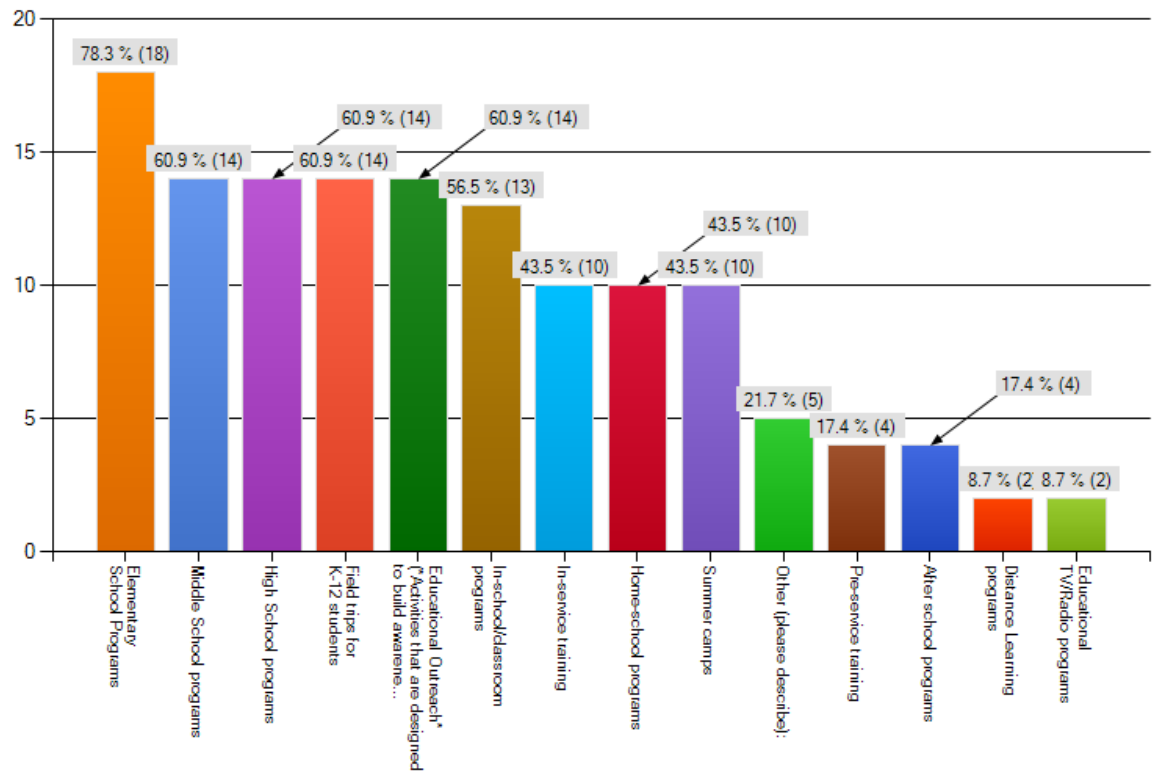
Local non-profits, state government agencies, and museums/zoos/aquariums comprised the majority of organizations responding to this question. “Other” responses included ‘public library’ and ‘southeast regional non-profit’. Two for-profit organizations were also asked to complete the survey but did not respond.

ERD Data requirement: Number of organizations surveyed that are part of the NOAA family (Sea Grant, Sanctuaries, Fisheries, etc.). (Survey Q#3)

Three quarters of the organizations surveyed (75% or 18 respondents) indicated they were NOT part of the NOAA family. One quarter (25.0%, or 6 respondents) of the organizations surveyed answered they were a NOAA agency or partner. But some responses indicated this question may not have been clearly defined, as two responded they partnered WITH the NIWB NERR. Of the six that answered “Yes”, three were actually NOAA-related or NOAA assets, including Sea Grant, the ACE Basin NERR, and a partner of US Integrated Ocean Observing System (IOOS). One respondent indicated they partnered by offering NOAA Ocean Exploration Workshops.

ERD Data requirement: Top five types of educational programming provided by other organizations (include percent breakdown). (Survey Q#6)

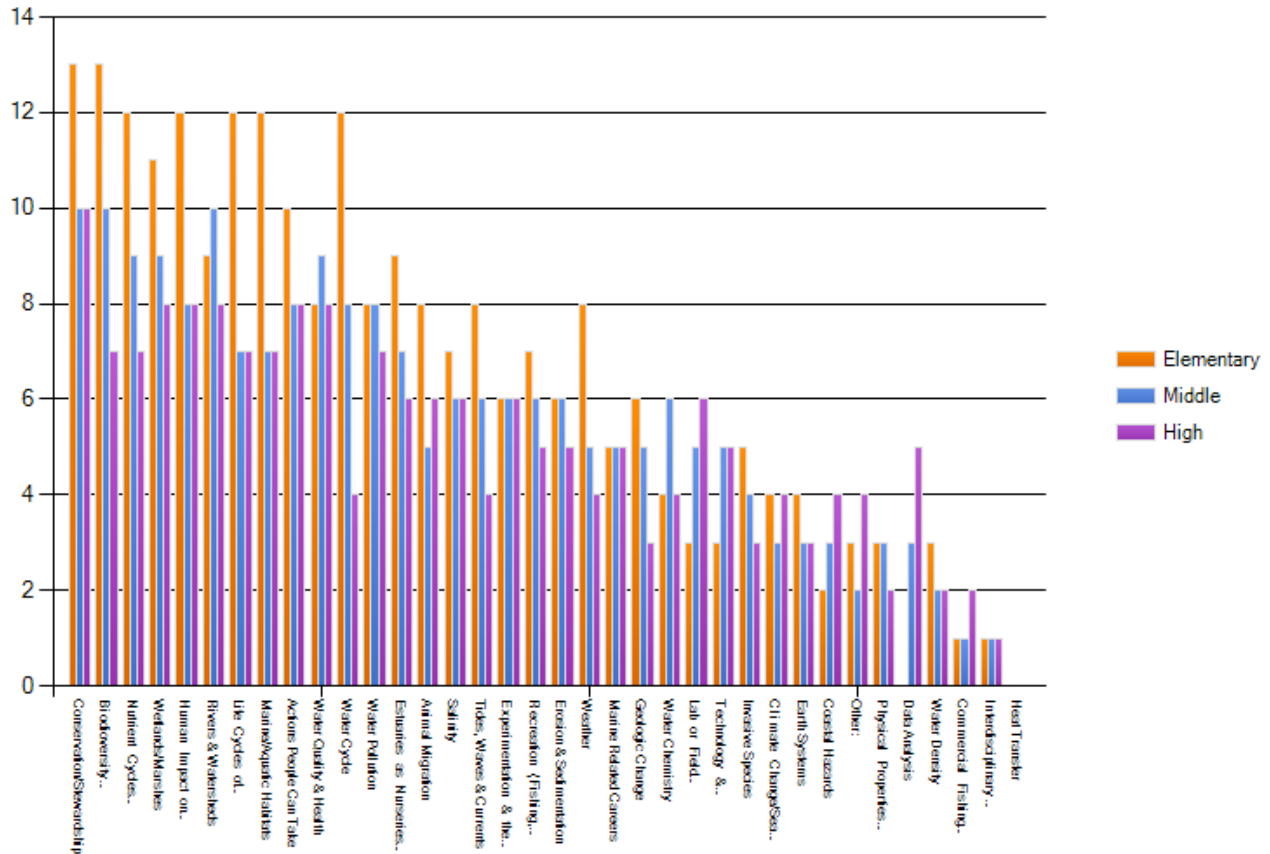
What types of educational programs does your organization provide? Please check all that apply.



From the responses generated, the Top 5 types of educational programs provided by other organizations include elementary, middle and high school programs, K12 field trips, and educational outreach. Also ranking high were in-school (classroom) programs, in-service training, home school programs, and summer camps. Least offered programming included distance learning and educational TV/radio programs.

ERD Data requirement: Top Five topics addressed by other organizations. (Survey Q#7)

Which of the following topics are addressed by your educational programming and for what grade levels? Please check all that apply.



Elementary School

Most Frequent Topics Addressed

Conservation/Stewardship & Biodiversity/Adaptation (Top 2 equally ranked with 13 responses each)

Nutrient Cycles/Food Webs, Human Impacts on the Environment, Life Cycles of Marine/Aquatic Organisms, Marine/Aquatic Habitats, & Water Cycle (Each topic received 12 responses -equally ranked)

Middle School

Most Frequent Topics Addressed

Conservation/Stewardship, Biodiversity/Adaptation, & Rivers/Watersheds (Top 3 equally ranked with 10 responses each)

Nutrient Cycles, Wetlands/Marshes, & Water Quality/Health (Next highest rankings with 9 responses each)

High School

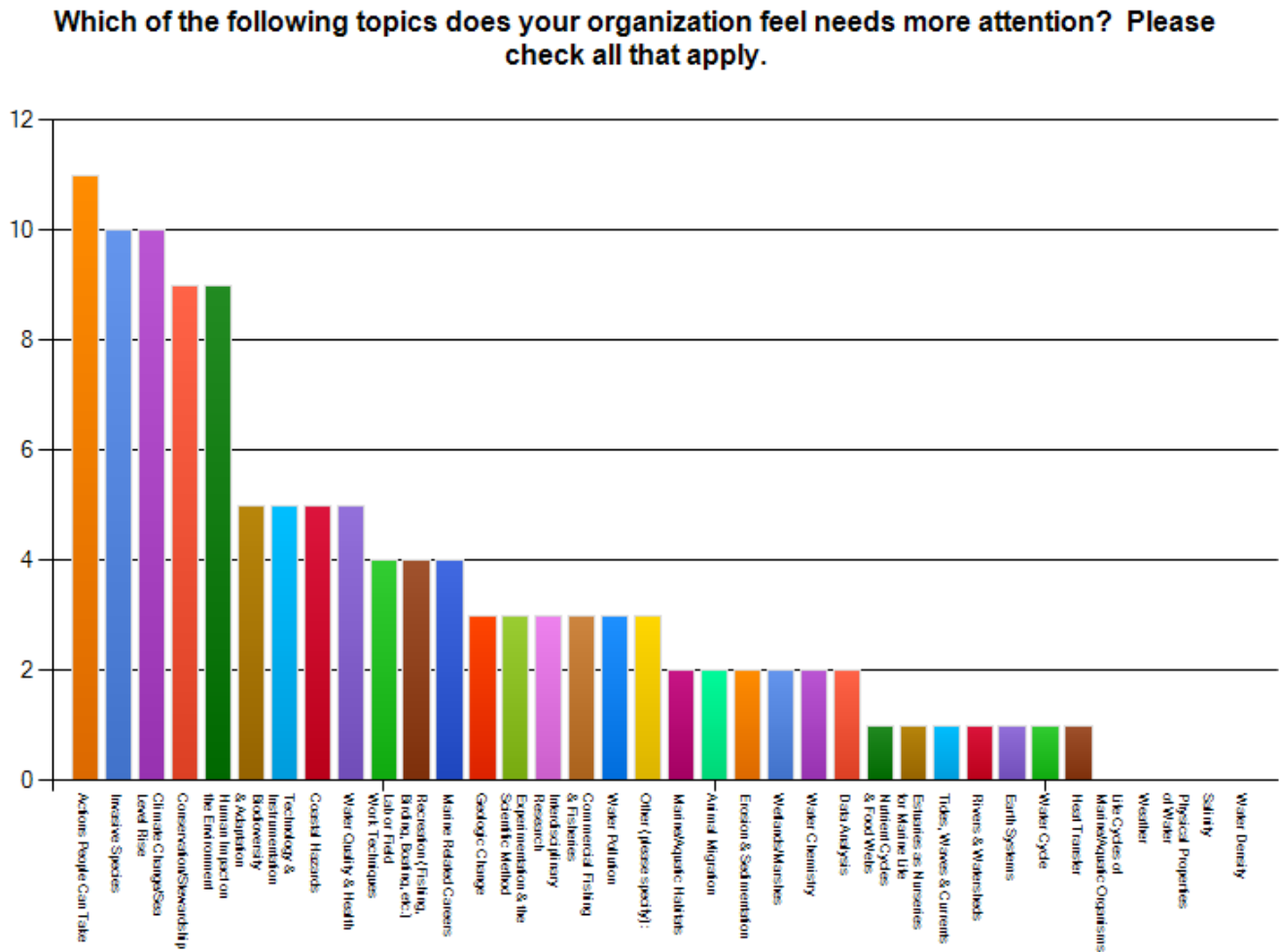
Most Frequent Topics Addressed

Conservation/Stewardship (Top ranking with 10 responses)

Wetlands/Marshes, Human Impacts on the Environment, Rivers/Watersheds, Actions People Can Take, & Water Quality/Health (equally ranked with 8 responses each)

Least addressed topics for all grade levels as indicated by survey respondents include Coastal Hazards, Lab or Field, Technology (Elementary); Water Density, Commercial Fishing, Interdisciplinary studies (Middle); and Interdisciplinary Studies, Commercial Fishing, Physical Properties of Seawater/Water Density.

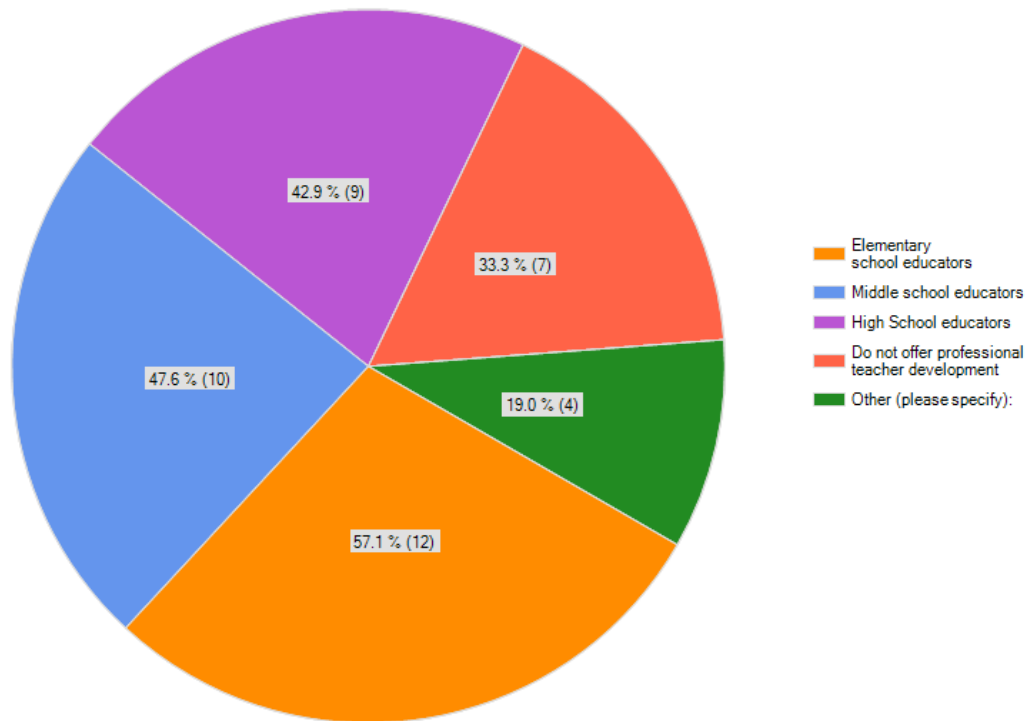
ERD Data requirement: Top five topics that other organizations think need more attention. (Survey Q#8)



Based on organizations' responses, the Top 5 topics listed as 'Needs More Attention' include: 1) Actions people can take, 2) Invasive species, 3) Climate change/sea level rise, 4) Conservation/stewardship, and 5) Human impacts on the environment. Other topics that ranked higher among respondents also included Biodiversity & adaptations, Technology & instrumentation, Coastal hazards, and Water quality & health. Of the choices offered to respondents, those that ranked low or were not selected at all include many topics that are traditionally offered by regional environmental education providers who therefore may feel these are adequately covered (such as Weather, Life cycles, Food webs, Water cycle, Properties of water, Rivers & watersheds, Tides, waves, & currents, Estuaries as nurseries, etc.).

ERD Data requirement: Number and percentage of organizations targeting each grade level. (Survey Q#12)

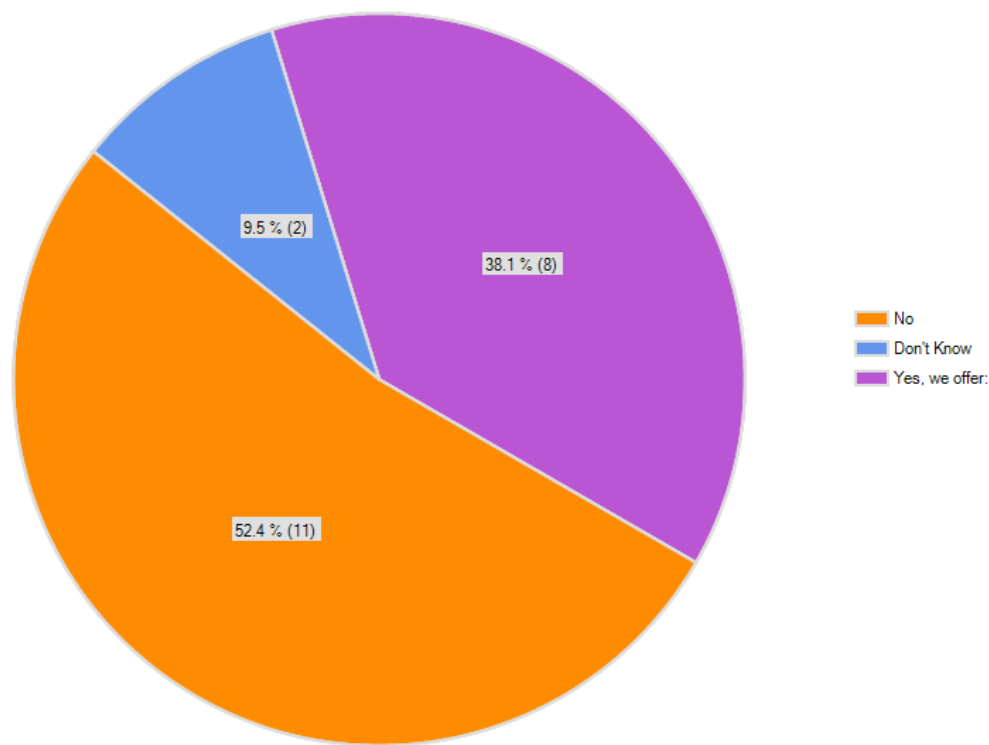
What grade level teachers or educators do your professional teacher development programs target? Check all that apply.



Organizations surveyed that provide professional teacher development target slightly more elementary level teachers, but also provide programs for middle and high school as well. Approximately one third of the respondents indicated they did not offer professional teacher development. Of the “Other” responses supplied, respondents noted they also offered professional development for pre-service teachers and informal educators.

ERD Data requirement: Percentage of other organizations that offer educational credits. (Survey Q#13)

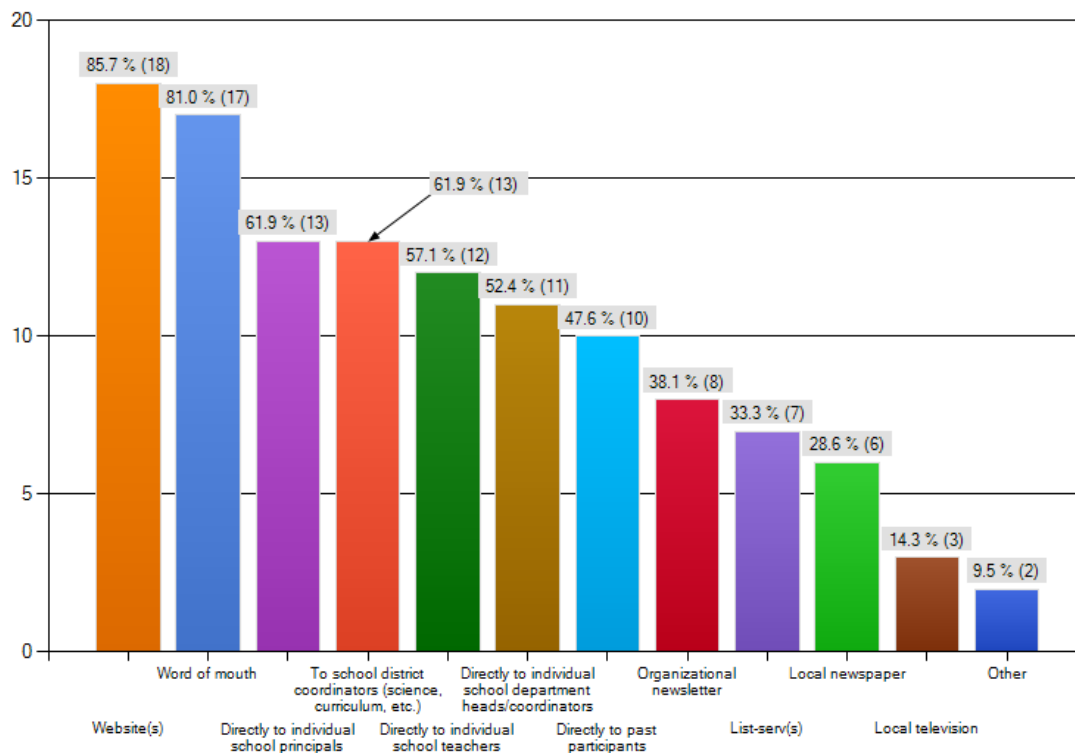
Do you offer teachers professional development credits?



Slightly more than half of the organizations surveyed do not offer professional development credits. Credits that are provided by organizations include Continuing Education (CEU) and Graduate Credits, Professional Development Credits (PDC), recertification or renewal, credits through the school district, and stipends.

ERD Data requirement: Top Five most common methods of marketing programs. (Survey Q#15)

How do you market your programs? Check all that apply.



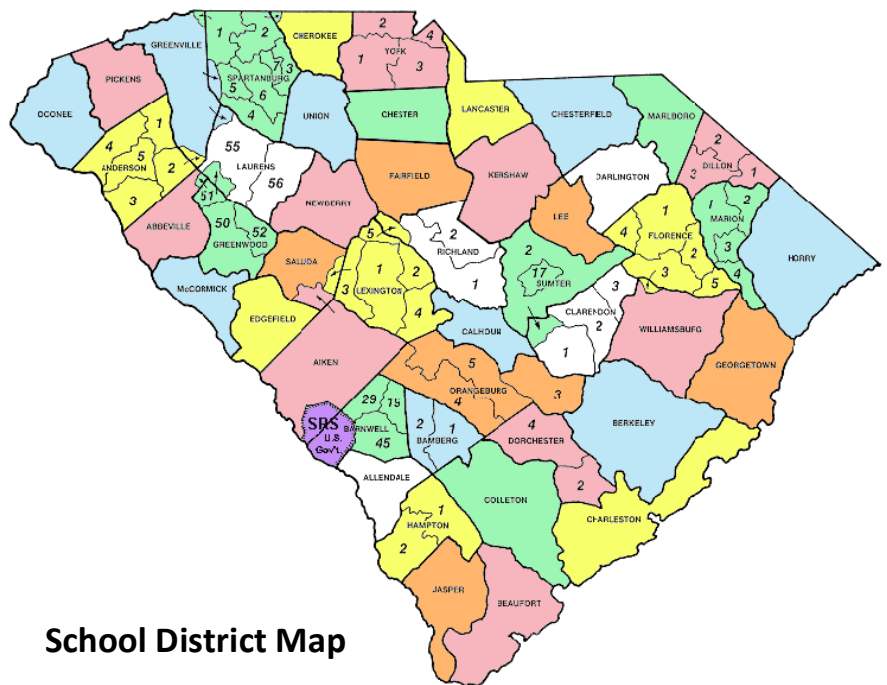
Data indicate the Top 5 most common methods of marketing programs include 1) Websites, 2) Word of mouth, 3) Directly to individual school principals, 4) To school district coordinators (science, curriculum, etc), and 5) Directly to individual teachers. Local television and local newspaper were the least selected marketing methods.

ERD Data requirement: Comparison of the counties served by other organizations with those served by your reserve. (Survey Q#16)

Q: Please list the School Districts/Counties your organization most frequently serves (Top Five).

SC School Districts And Counties Served

County Served	# Responses
Georgetown	13
Horry	9
Charleston	7
Berkeley	6
Dorchester, Dorchester 2	5
Richland, Richland 1/2	5
Lexington, Lexington 1/2/3/4/5	4
Colleton	3
Beaufort	2
Greenville	2
Clarendon	1
Florence	1
Newberry	1
Oconee	1
Williamsburg	1



Survey respondents were asked to list the Top 5 counties they most frequently served. As anticipated from the geographic target of the MA, Georgetown and Horry Counties were the most listed, with Charleston, Berkeley and Dorchester also receiving multiple responses. Richland and Lexington, both large school districts in the center of the state surrounding Columbia, the state capital, are served by two large upstate education providers, the SC State Museum and Riverbanks Zoo. Williamsburg County appears to be an underserved area that may benefit from the resources of local providers, and directly impacts the Winyah Bay watershed.

Note a large gap in Horry County information-lack of survey response for the north coast from several key EE providers, including Playcard Environmental Education Center, the EE provider for the Horry County School District which serves over 10,000 K-12 school visitors per year. Playcard was established in 1987 on a 200 acre rural site that includes Playcard Swamp, an integral component of the experiential education resources the location provides. Horry County School District employs a full time on-site educator to coordinate and instruct a variety of field experiences for K-12 students, and serves primarily Horry County schools but is also available to other districts and user groups. The NIWB will continue to work to include this key environmental education provider (also a member of the Georgetown-Horry Regional Education Network (GREEN) in future regional planning efforts for the Reserve's K-12 programming and KEEP initiatives.

Site-Based Survey Information

Other information collected through the survey was site-based. Information useful to local programming included questions such as the organization's primary mission and program emphases, minimum and maximum group size, program fees, facilities or special features for environmental education programming, and teacher resources offered.

Site-based Question: What are your primary program emphases (Top Three)? (Survey Q#5)

- #1 Hands –on experiential education (13 responses; 54.2%),
- #2 Field based education (12 responses; 50.0%),
- #3 Stewardship (9 responses; 37.5%).

"Other" (8 responses; 33.0%) included: Docent led gallery programs with limited hands on experience; Indoor programs that meet state standards; Environmental career exploration and issue analysis; Engage formal and informal education audiences and stakeholders regarding observing technologies, data, products, and services; Field-study based education through guided tours, lessons, hands-on experiences and programs correlating with SC curriculum standards; The library offers programs for all ages- really a facilitator offering many different opportunities for learning and entertainment to the Georgetown county citizens and visitors; Early childhood teacher inquiry-based science education with emphasis on creating natural habitats at local elementary schools (i.e. nature trails); and scientist-educator learning opportunities. No respondents answered that their primary program emphases included research methods and experimentation.

Site-based Question: What group size is your organization willing to accommodate during a typical program? (Survey Q#9)

Answers ranged from a minimum of 1 to a maximum of 150, but the range of average minimum and average maximum group size (from 21 responses) was 10 to 56 students.

Site-based Question: What is the program fee to the participant(s)? (Survey Q#10)

Ten respondents (of the 18 that answered this question) offered some type of free programming to their audiences. In addition, there were a range of fees depending on the organization as well as the typed of program offered.

Per Student: Fees ranged from \$0-14.50

Per Teacher/Chaperone: Teachers free with student admission (per 5-10 students); chaperones free with student admission (per 5-10 students) to \$14.00. Some organizations charged a chaperone fee, but at a reduced rate from regular admission.

Per Program: Ranged from free to \$40.00 per class, to \$125.00 for an outreach program, to \$1500.00 for a workshop

Site-based Question: What facilities and/or special features does your organization offer for environmental education programming for school groups? (Survey Q#11)

Of the 18 respondents that answered this question, the top responses were restroom facilities (72.2%), education exhibits (66.7%), outdoor classroom (55.6%), picnic area (55.6%), and bus parking (55.6%). 'Other' responses included: Meeting room that accommodates 75+, LCD projector, internet, wifi; Bring materials to the school or visit established sites run by others, and also plant treasures to find in a forest/field scavenger hunt at the host school when travel is not planned; Campsites for overnight accommodations; and Lunch area and camp-ins.

Site-based Question: Which resources do you make available to teachers? (Survey Q#14) Of the 21 responses collected, 15 (71.4%) offered pre and post activities, 13 (61.9%) provided staff/volunteer led activities, 11 (52.4%) provided teacher led activities, and 11 (52.4%) offered lesson plans. Other resources included resource lists (10 responses, 47.6%), background information (9 responses, 42.9%), and curriculum (9 responses, 42.9%).